United States
Department of
Agriculture

Natural Resources
Conservation
Service

Oregon
Basin Outlook Report

March 1st, 2016

Trevor Smith and Jake Johnstone measure snow at Ski Bowl Road snow course
Photo courtesy of Travis Kelly (Cooperative Snow Surveyor, Medford, OR)

Snow surveyors from the Oregon Water Resources Department measured 21.8 inches of water and 53 inches of snow depth at Ski Bowl Road snow course on Leap Day 2016. This is 104% of normal for this site in the Siskiyou Mountains, which has been measured monthly since 1966. Snowpack in the Rogue and Umpqua basins is at 103% of normal as of March 1st. Despite a warm February and widespread snowmelt, Oregon's mountains continue to maintain a near normal snowpack.

Contents

General Outlook

March 1st, 2016

SUMMARY

February was warm and dry across most of Oregon. The weather pattern took a noticeable turn from the persistent winter storm track that was responsible for piling up snow across the state in December and January. Even with February's hiatus from winter weather, most of the state's mid to high elevations continue to bask in the glow of a near normal to above normal snowpack as of March 1st. Although there was ample snow for winter recreation, snowpack in the northern Oregon Cascades continues to lag behind the rest of the state with a below normal snowpack. Given the near normal snowpack throughout most of the state, most streamflow forecasts are calling for near normal to above normal volumes for the summer water supply season.

The warm weather trend is predicted to continue for the next three months according to NOAA's Climate Prediction Center (CPC): http://www.cpc.ncep.noaa.gov/. However, as this year has proven so far, even amidst an overall warm weather pattern, there is room for individual, cold storms to bring more snow to the mountains. While current snowpack conditions and streamflow forecasts provide a promising water supply outlook for most of Oregon, March and April weather will ultimately shape the peak of the snowpack season and set the stage for the summer water supply season.

SNOWPACK

February was a dynamic month for Oregon's snowpack. Warm temperatures, sunshine and mountain rain instigated the first round of low and mid-elevation snowmelt for the season. Despite the warm month, the higher elevations continued to accumulate snow and most basins have a near normal snowpack as of March 1st. The snowpack in northeastern Oregon has been the most resilient against the warm temperatures and saw the most significant amounts of accumulation for the month. The Harney and John Day basins have fared the best this season, having the highest March 1st snowpacks in the state at 107% and 106% of normal, respectively. Conversely, the Willamette basin has the lowest March 1st snowpack at 82% of normal, and the Hood, Sandy and Lower Deschutes basins are second lowest at 84% of normal.

Peak snow season typically occurs during the latter half of March for most Oregon basins. As of March 1st, the snowpack is currently about 90% of its normal seasonal peak for the majority of the state. Snowpacks are dense and consolidated throughout the state, meaning they are at the tipping point between remaining frozen and melting. The next few weeks of weather are critical for the timing of the peak snowpack and the onset of high elevation snowmelt. Simply keeping warm temperatures, mountain rainfall and sunshine at bay for a little longer would preserve the snowpack, allowing Oregon's basins to reach normal conditions for both peak snowpack and the timing of snowmelt.

PRECIPITATION

Precipitation for the water year, which began on October 1st, has been near average to above average for all basins. This has led to the near normal March 1st snowpack where temperatures remained cold enough to deposit precipitation in the form of snow.

While the water year has been wet overall, the southern tier of the state received below average amounts of precipitation during February. The month remained wet in northern Oregon, bringing near average to above average precipitation for this region. The Hood, Sandy and Lower Deschutes basins have had the most precipitation for the water year (120% of average) and the highest February precipitation (107% of average). The fact that northwestern Oregon has received the most precipitation in the state and is the most behind for snowpack illustrates the influence of temperature on snowpack.

RESERVOIRS

Major irrigation reservoirs throughout the state were able to capture the mid-February runoff, causing much improvement in storage from last month. In general, western and central Oregon reservoirs are storing near average amounts of water as of the end of February. However, storage levels at many key reservoirs in southern and eastern Oregon remain low as a result of a multi-year drought. For instance, one of the lowest in the state is Lake Owyhee at only 30% of capacity and 55% of average.

STREAMFLOW

Snowmelt and rainfall drove many of Oregon's rivers up last month. Most rivers experienced near average to above average streamflow volumes during February. The snowpack still remains near normal throughout most of the state despite a warm and dry month. Based on current snowpack conditions, streamflows are expected to be near normal to above normal for the summer water supply season for most regions of the state. However, all of the forecasts decreased from last month because of warm temperatures across the state and below average precipitation in many basins. If warm and dry conditions continue through the month of March, summer streamflow forecasts will likely decrease for the April 1st report.

A summary of streamflow forecasts for Oregon follows:

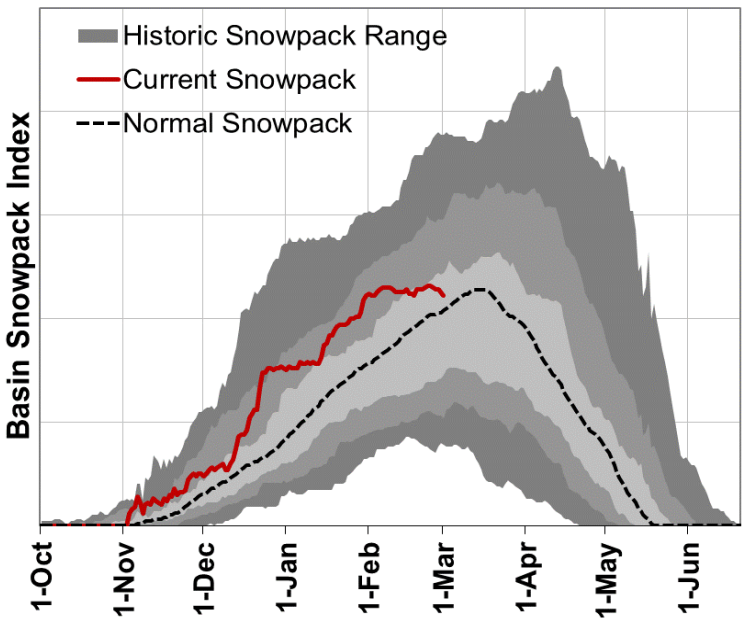
STREAM	Median Forecast (April through September)	
	Volume (Acre-Feet)	Percent of Average
Owyhee Reservoir Inflow	445,000	110%
Grande Ronde R at Troy	1,370,000	105%
Umatilla R at Pendleton	161,000	105%
Deschutes R at Benham Falls	530,000	109%
Willamette R at Salem	4,880,000	103%
Rogue R at Raygold	855,000	106%
Upper Klamath Lake Inflow	410,000	85%
Silvies R nr Burns	96,000	104%

Some of these forecasts assume that normal weather conditions will occur from now to the end of the forecast period. This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators. This report will be updated monthly, January through June.

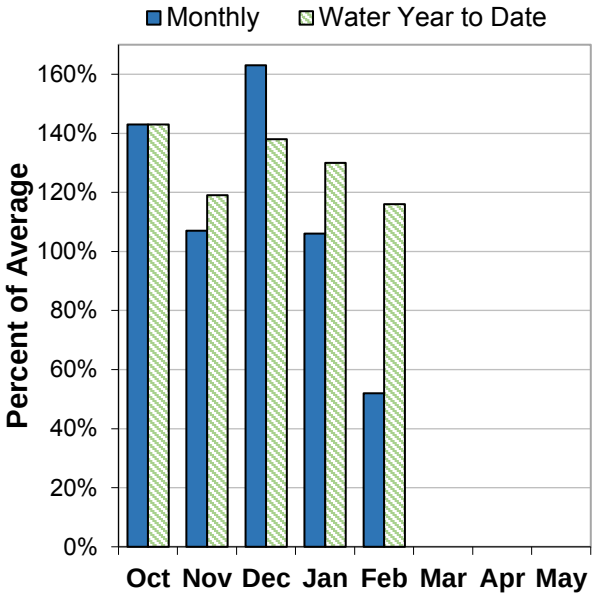
Owyhee and Malheur Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 104% of normal. This is significantly lower than last month when the snowpack was 143% of normal.

PRECIPITATION

February precipitation was 52% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 116% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 46% of average at Warm Springs Reservoir to 96% of average at Bully Creek Reservoir.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 88% to 114% of average. Overall, forecasts decreased significantly from last month's report.

Owyhee And Malheur Basins Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Owyhee R nr Rome	MAR-JUL	390	520	610	118%	700	830	515
	MAR-SEP	405	540	630	119%	720	850	530
	APR-SEP	205	330	415	114%	500	625	365
Owyhee R bl Owyhee Dam[2]	MAR-JUL	405	540	645	116%	755	935	555
	MAR-SEP	440	575	675	115%	785	960	585
	APR-SEP	250	360	445	110%	540	700	405
Malheur R nr Drewsey	MAR-JUL	50	75	94	84%	116	152	112
	APR-JUL	24	44	61	81%	80	114	75
	APR-SEP	33	51	65	88%	81	108	74
NF Malheur R at Beulah	MAR-JUL	45	61	73	96%	86	108	76

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume
2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	**Current (KAF)**	**Last Year (KAF)**	**Average (KAF)**	**% of Average**	**Useable Capacity (KAF)**
Beulah	25.9	28.3	32.1	81%	59.2
Bully Creek	15.8	12.0	16.4	96%	23.7
Lake Owyhee	217.7	168.7	392.6	55%	715.0
Warm Springs	37.6	34.3	82.2	46%	169.6

Snowpack Summary by Basin		**Basin Snowpack % of Median**	
	# of Sites	**Current Yr**	**Last Yr**
East Little Owyhee Basin	7	108%	25%
South Fork Owyhee Basin	6	114%	42%
Upper Malheur Basin	8	106%	27%
Upper Owyhee Basin	5	111%	47%

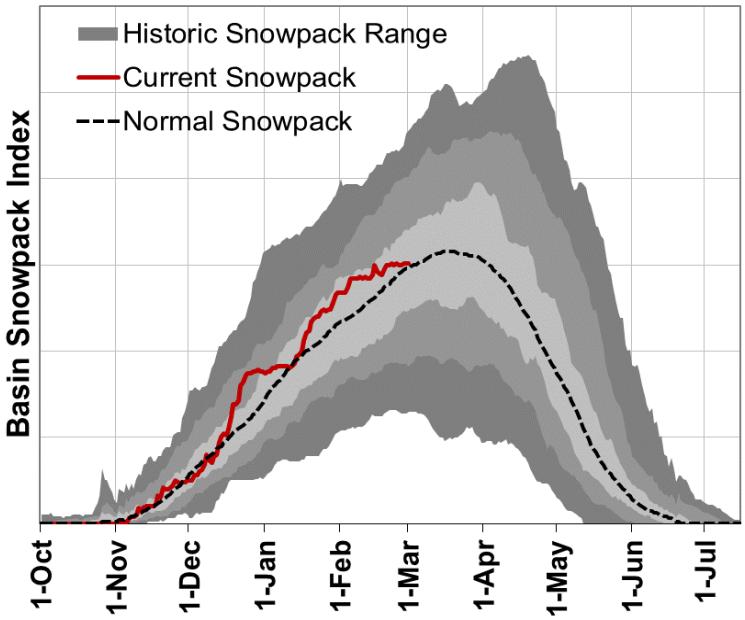
Owyhee And Malheur Basins Summary for March 1, 2016

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	Median	% of Median
Granite Peak SNOTEL	8543	1-Mar	51	19.0	10.2	18.3	104%
Trout Creek AM	7890	1-Mar	24	9.8	8.1	11.5	85%
Toe Jam SNOTEL	7700	1-Mar	44	16.6	9.9		
Govt Corrals AM	7400	1-Mar	33	13.6	7.4		
Jack Creek Upper SNOTEL	7250	1-Mar	44	16.2	10.2	14.4	113%
Dobson Creek Snow Course	7084	1-Mar	64	23.8	13.3	23.6	101%
Reynolds-Dobson Divide Snow Course	7064	1-Mar	57	22.4	13.3	21.2	106%
Fawn Creek SNOTEL	7000	1-Mar	47	17.4	9.0	13.4	130%
Merritt Mountain AM	7000	25-Feb	14	5.0	0.2	6.2	81%
Buckskin Lower SNOTEL	6915	1-Mar	26	11.2	0.5	8.1	138%
Reynolds West Fork #2 Snow Course	6798	1-Mar	60	21.2	15.0	21.6	98%
Gold Creek Snow Course	6707	25-Feb	18	6.4	0.0	5.8	110%
Big Bend SNOTEL	6700	1-Mar	27	11.0	3.2	8.4	131%
Fry Canyon SNOTEL	6700	1-Mar	7	2.9	0.8		
Fry Canyon Snow Course	6700	25-Feb	21	6.9	1.0	7.9	87%
Laurel Draw SNOTEL	6697	1-Mar	27	9.4	2.5	10.0	94%
Columbia Basin AM	6650	25-Feb	24	8.6	0.2	8.6	100%
Red Canyon AM	6600	29-Feb	15	6.0	0.0	7.7	78%
Louse Canyon AM	6530	29-Feb	18	7.0	0.0	4.2	167%
South Mtn. SNOTEL	6500	1-Mar	31	14.0	3.4	15.0	93%
Succor Creek AM	6310	29-Feb	15	6.0	0.0	8.4	71%
Quinn Ridge AM	6270	29-Feb	4	1.6	0.0	2.0	80%
Taylor Canyon SNOTEL	6200	1-Mar	21	7.0	0.0	5.2	135%
Blue Mountain Spring SNOTEL	5870	1-Mar	40	15.4	7.2	14.4	107%
Vaught Ranch AM	5850	29-Feb	3	1.2	0.0	4.8	25%
Barney Creek (New) Snow Course	5830	29-Feb	27	8.7	4.3		
Buck Pasture AM	5740	29-Feb	3	1.2	0.0	1.6	75%
Lookout Butte AM	5740	29-Feb	0	0.0	0.0	0.0	
Mud Flat SNOTEL	5730	1-Mar	12	4.9	0.3	7.1	69%
Battle Creek AM	5710	29-Feb	7	2.8	0.0	3.6	78%
Boulder Creek AM	5710	29-Feb	2	0.8	0.0	3.0	27%
Democrat Creek Snow Course	5686	1-Mar	26	10.2	2.5	9.4	109%
Reynolds Creek SNOTEL	5600	1-Mar		1.7	1.2	2.1	81%
Bull Basin AM	5460	29-Feb	2	0.8	0.0	1.9	42%
Dooley Mountain Snow Course	5440	29-Feb	21	7.0	2.4	8.2	85%
Call Meadows AM	5380	29-Feb	12	4.4	0.0	4.4	100%
Bully Creek AM	5300	29-Feb	9	3.6	0.0	1.8	200%
Rock Springs SNOTEL	5290	1-Mar	13	5.1	0.8	6.2	82%
Lake Creek R.S. SNOTEL	5240	1-Mar	27	10.7	4.4	10.3	104%
Flag Prairie AM	4720	29-Feb	10	3.6	0.0	4.0	90%
Eldorado Pass Snow Course	4630	29-Feb	13	4.6	0.0	3.0	153%

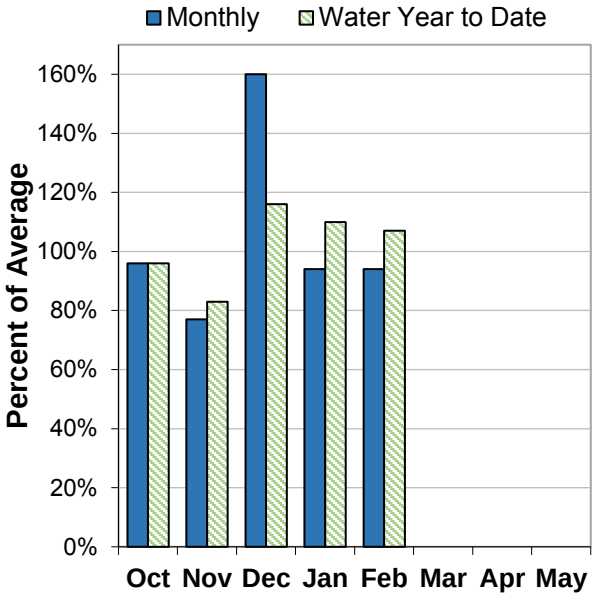
Grande Ronde, Powder, Burnt and Imnaha Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 99% of normal. This is significantly lower than last month when the snowpack was 114% of normal.

PRECIPITATION

February precipitation was 94% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 107% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 25% of average at Phillips Lake to 106% of average at Wallowa Lake.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 92% to 123% of average. Overall, forecasts decreased slightly from last month's report.

Grande Ronde, Powder, Burnt And Imnaha Basins Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Burnt R nr Hereford	MAR-JUL	36	48	56	122%	64	76	46
	APR-SEP	22	34	43	123%	51	63	35
Deer Ck nr Sumpter	MAR-JUL	14.0	17.2	19.4	105%	22	25	18.5
Powder R nr Sumpter	MAR-JUL	56	68	76	121%	83	95	63
	APR-JUL	44	55	63	119%	71	82	53
	APR-SEP	44	56	64	119%	72	84	54
Wolf Ck Reservoir Inflow[2]	MAR-JUN	13.2	16.8	19.3	107%	22	25	18.1
Pine Ck nr Oxbow	MAR-JUL	125	164	190	95%	215	255	200
	APR-JUL	94	126	148	94%	169	200	157
	APR-SEP	99	131	153	94%	175	210	163
Imnaha R at Imnaha	APR-JUL	174	220	255	100%	285	335	255
	APR-SEP	190	240	275	98%	310	360	280
Catherine Ck nr Union	APR-JUL	48	57	64	107%	70	79	60
	APR-SEP	51	61	68	106%	74	84	64
Lostine R nr Lostine	APR-JUL	89	98	104	98%	110	118	106
	APR-SEP	95	105	111	97%	118	128	115
Bear Ck nr Wallowa	APR-SEP	47	55	60	92%	66	74	65
Grande Ronde R at Troy[1]	MAR-JUL	1250	1450	1580	105%	1710	1910	1510
	APR-SEP	1030	1220	1360	104%	1500	1690	1310

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Phillips Lake	8.6	24.1	34.8	25%	73.5
Thief Valley	14.1	13.9	13.7	103%	13.3
Unity	11.2	20.2	14.5	77%	25.5
Wallowa Lake	17.4	28.5	16.4	106%	37.5
Wolf Creek	2.3	4.3	3.4	67%	11.1

Grande Ronde, Powder, Burnt And Imnaha Basins Summary for March 1, 2016

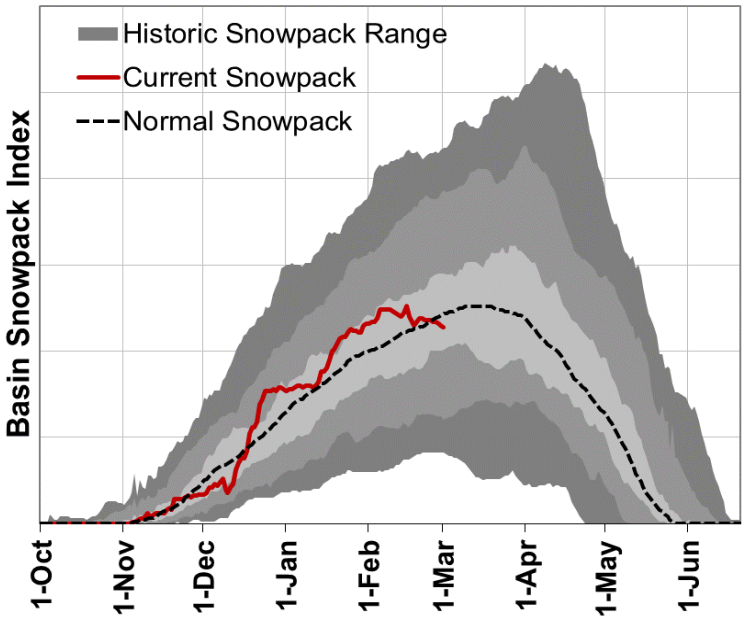
Snowpack Summary by Basin		Basin Snowpack % of Median	
	# of Sites	Current Yr	Last Yr
Burnt Basin	5	114%	38%
Imnaha Basin	5	98%	71%
Lower Grande Ronde Basin	4	87%	37%
Powder Basin	11	109%	60%
Upper Grande Ronde Basin	8	100%	61%
Wallowa Basin	5	92%	72%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Mt. Howard SNOTEL	7910	1-Mar	34	10.8	13.2	11.8	92%
Aneroid Lake #2 SNOTEL	7400	1-Mar	51	17.2	13.3	20.2	85%
Anthony Lake (Rev) Snow Course	7160	1-Mar	62	22.8	18.5	20.0	114%
TV Ridge AM	7050	1-Mar	31	10.2	8.6	14.2	72%
Little Alps Snow Course	6360	1-Mar	33	11.3	6.3	10.4	109%
Big Sheep AM	6230	1-Mar	48	17.6	12.2	21.4	82%
Bear Saddle SNOTEL	6180	1-Mar	62	24.5	10.9	21.0	117%
Placer Creek Snow Course	5860	28-Feb	50	19.6	9.8	15.4	127%
Bourne SNOTEL	5850	1-Mar	35	15.0	6.5	14.0	107%
Barney Creek (New) Snow Course	5830	29-Feb	27	8.7	4.3		
Moss Springs SNOTEL	5760	1-Mar	53	21.3	15.6	20.9	102%
Taylor Green SNOTEL	5740	1-Mar	43	18.9	10.8	18.1	104%
Boulder Creek AM	5710	29-Feb	2	0.8	0.0	3.0	27%
Spruce Springs SNOTEL	5700	1-Mar	25	10.2	2.0	14.7	69%
Wolf Creek SNOTEL	5630	1-Mar	44	13.9	7.9	14.6	95%
Milk Shakes SNOTEL	5580	1-Mar	85	33.9	18.5		
West Branch SNOTEL	5560	1-Mar	53	19.2	10.8	19.0	101%
Touchet SNOTEL	5530	1-Mar	63	27.7	9.8	26.5	105%
Eilertson Meadows SNOTEL	5510	1-Mar	25	10.3	0.3	9.2	112%
Dooley Mountain Snow Course	5440	29-Feb	21	7.0	2.4	8.2	85%
Gold Center SNOTEL	5410	1-Mar	31	12.3	4.7	9.0	137%
Schneider Meadows SNOTEL	5400	1-Mar	74	29.4	17.2	25.3	116%
Beaver Reservoir SNOTEL	5150	1-Mar	24	9.8	4.6	8.9	110%
Tipton SNOTEL	5150	1-Mar	39	14.5	6.1	11.1	131%
Thorson Cabin #2 Snow Course	5100	28-Feb	31	14.0	1.8		
High Ridge SNOTEL	4920	1-Mar	51	23.7	12.4	21.4	111%
County Line SNOTEL	4830	1-Mar	0	0.0	0.1	4.3	0%
Eldorado Pass Snow Course	4630	29-Feb	13	4.6	0.0	3.0	153%
Little Antone (Alt.) Snow Course	4560	1-Mar	24	9.7	2.7	8.8	110%
Bowman Springs SNOTEL	4530	1-Mar	13	5.8	0.7	7.5	77%
East Eagle Snow Course	4400	1-Mar	62	23.0	15.4	21.1	109%
Sourdough Gulch SNOTEL	4000	1-Mar	0	0.0	0.2	0.2	0%

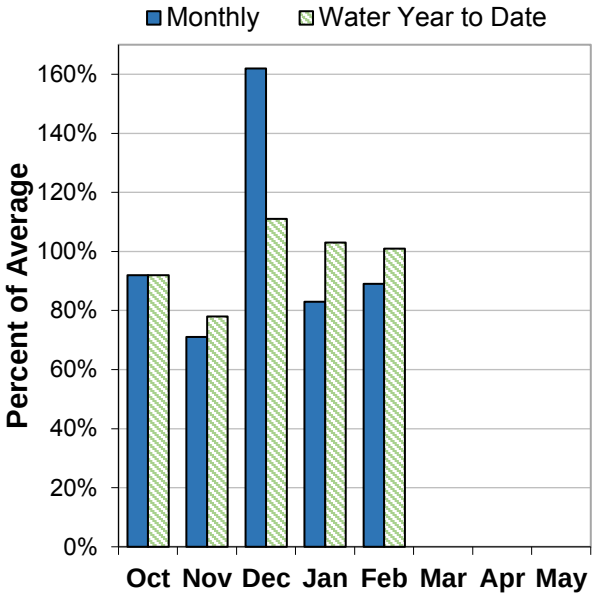
Umatilla, Walla Walla and Willow Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 93% of normal. This is significantly lower than last month when the snowpack was 116% of normal.

PRECIPITATION

February precipitation was 89% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 101% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 85% of average at Cold Springs Reservoir to 98% of average at Mckay Reservoir.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 87% to 105% of average. Overall, forecasts decreased slightly from last month's report. Water supplies in the basin are likely to be below normal to near normal this summer.

Umatilla, Walla Walla And Willow Basins Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
SF Walla Walla R nr Milton-Freewater	MAR-SEP	66	74	79	99%	84	92	80
	APR-JUL	43	49	53	98%	57	63	54
	APR-SEP	54	60	65	98%	70	76	66
Umatilla R ab Meacham Ck Gibbon	MAR-SEP	81	96	106	100%	116	131	106
	APR-JUL	53	66	75	101%	84	97	74
	APR-SEP	59	72	81	101%	90	103	80
Umatilla R at Pendleton	MAR-SEP	174	210	230	102%	255	290	225
	APR-JUL	103	133	154	105%	174	205	147
	APR-SEP	110	140	161	105%	182	210	153
McKay Ck nr Pilot Rock	MAR-JUL	24	39	49	96%	59	74	51
	APR-SEP	10.7	22	30	97%	38	49	31
Butter Ck nr Pine City	MAR-JUL	6.4	10.2	12.9	87%	15.5	19.4	14.9
	APR-SEP	3.7	6.6	8.5	87%	10.5	13.4	9.8
Willow Ck ab Willow Lk nr Heppner	MAR-JUL	3.2	6.5	8.7	86%	10.8	14.1	10.1
	APR-JUL	1.51	4.1	5.9	84%	7.7	10.3	7.0
Rhea Ck nr Heppner	MAR-JUL	3.8	7.3	9.6	86%	11.9	15.3	11.1

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Reservoir Storage	**Current (KAF)**	**Last Year (KAF)**	**Average (KAF)**	**% of Average**	**Useable Capacity (KAF)**
Cold Springs	16.6	23.8	19.6	85%	38.6
Mckay	38.4	44.5	39.2	98%	71.5
Willow Creek	4.2	5.2	4.6	91%	9.8

Snowpack Summary by Basin		**Basin Snowpack % of Median**	
	# of Sites	**Current Yr**	**Last Yr**
Umatilla Basin	5	90%	43%
Walla Walla Basin	7	93%	40%

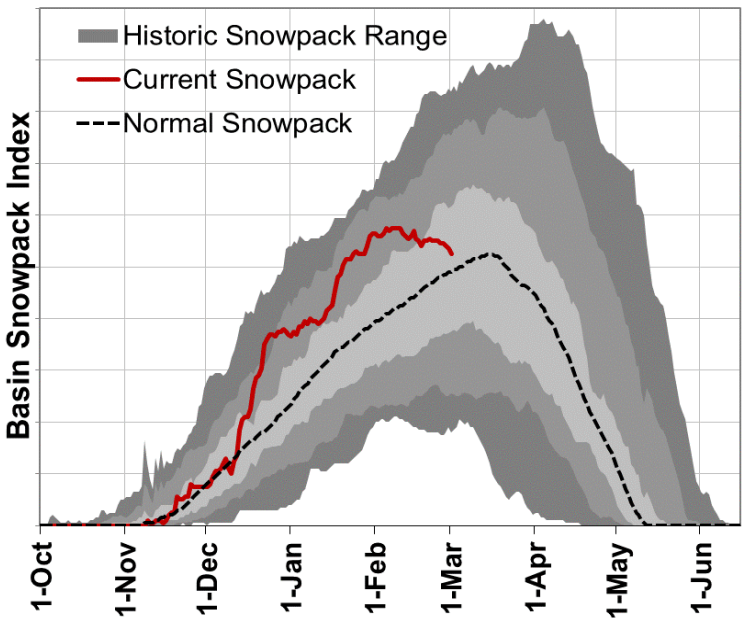
Umatilla, Walla Walla And Willow Basins Summary for March 1, 2016

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Arbuckle Mtn SNOTEL	5770	1-Mar	39	13.9	8.8	15.2	91%
Spruce Springs SNOTEL	5700	1-Mar	25	10.2	2.0	14.7	69%
Milk Shakes SNOTEL	5580	1-Mar	85	33.9	18.5		
Touchet SNOTEL	5530	1-Mar	63	27.7	9.8	26.5	105%
Madison Butte SNOTEL	5150	1-Mar	5	2.2	1.0	3.9	56%
Lucky Strike SNOTEL	4970	1-Mar	13	6.3	1.7	6.8	93%
High Ridge SNOTEL	4920	1-Mar	51	23.7	12.4	21.4	111%
Indian Ridge Snow Course	4908	25-Feb	57	22.2	6.7		
Bowman Springs SNOTEL	4530	1-Mar	13	5.8	0.7	7.5	77%
Emigrant Springs SNOTEL	3800	1-Mar	0	0.0	0.0	4.1	0%

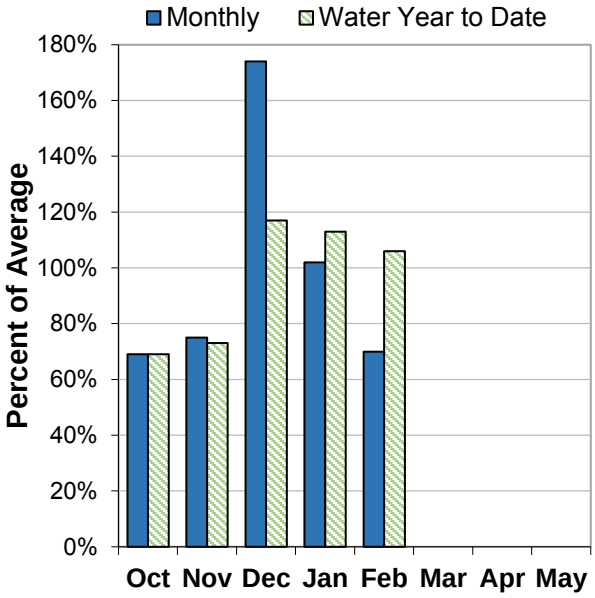
John Day Basin

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 106% of normal. This is significantly lower than last month when the snowpack was 141% of normal. This basin has the second highest snowpack in the state.

PRECIPITATION

February precipitation was 70% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 106% of average.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 91% to 114% of average. Overall, forecasts decreased significantly from last month's report.

John Day Basin Summary for March 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *

Streamflow Forecasts March 1, 2016	Forecast Period	←--------Drier----------Future Conditions--------Wetter--------→ 90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	Average (KAF)
Strawberry Ck nr Prairie City	MAR-JUL	6.1	7.7	8.7	102%	9.7	11.3	8.5
	APR-SEP	6.3	7.9	9.0	102%	10.1	11.7	8.8
Mountain Ck nr Mitchell	MAR-JUL	4.3	6.0	7.2	114%	8.4	10.1	6.3
	APR-SEP	3.0	4.6	5.6	114%	6.6	8.2	4.9
Camas Ck nr Ukiah	MAR-JUL	29	38	45	92%	51	61	49
	APR-SEP	15.7	25	32	91%	38	47	35
MF John Day R at Ritter	MAR-JUL	108	140	161	103%	182	215	156
	APR-SEP	80	109	129	102%	148	178	126
NF John Day R at Monument	MAR-JUL	555	695	790	103%	890	1030	765
	APR-SEP	395	520	610	102%	700	825	600

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

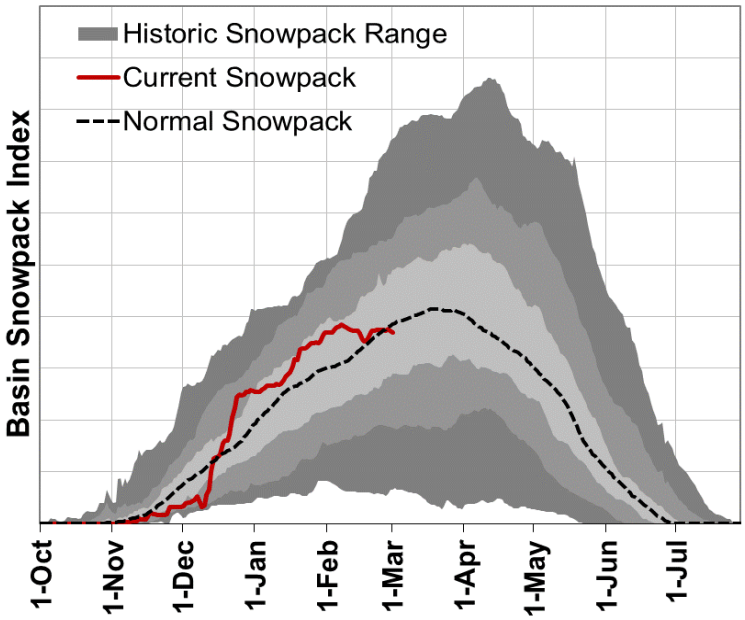
Snowpack Summary by Basin	Basin Snowpack % of Median # of Sites	Current Yr	Last Yr
Lower John Day Basin	6	108%	25%
North Fork John Day Basin	8	103%	56%
Upper John Day Basin	6	117%	42%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	Median	% of Median
Anthony Lake (Rev) Snow Course	7160	1-Mar	62	22.8	18.5	20.0	114%
Little Alps Snow Course	6360	1-Mar	33	11.3	6.3	10.4	109%
Snow Mountain SNOTEL	6230	1-Mar	26	12.7	4.7	9.8	130%
Blue Mountain Spring SNOTEL	5870	1-Mar	40	15.4	7.2	14.4	107%
Derr Snow Course	5860	29-Feb	28	10.7	2.2	9.2	116%
Bourne SNOTEL	5850	1-Mar	35	15.0	6.5	14.0	107%
Derr. SNOTEL	5850	1-Mar	45	18.5	6.9	12.8	145%
Barney Creek (New) Snow Course	5830	29-Feb	27	8.7	4.3		
Arbuckle Mtn SNOTEL	5770	1-Mar	39	13.9	8.8	15.2	91%
Ochoco Meadows SNOTEL	5430	1-Mar	23	10.0	0.5	10.0	100%
Gold Center SNOTEL	5410	1-Mar	31	12.3	4.7	9.0	137%
Starr Ridge SNOTEL	5250	1-Mar	12	5.4	0.7	6.2	87%
Lake Creek R.S. SNOTEL	5240	1-Mar	27	10.7	4.4	10.3	104%
Ochoco Meadows Snow Course	5190	2-Mar	27	9.8	1.5	10.0	98%
Madison Butte SNOTEL	5150	1-Mar	5	2.2	1.0	3.9	56%
Tipton SNOTEL	5150	1-Mar	39	14.5	6.1	11.1	131%
Lucky Strike SNOTEL	4970	1-Mar	13	6.3	1.7	6.8	93%
County Line SNOTEL	4830	1-Mar	0	0.0	0.1	4.3	0%
Marks Creek Snow Course	4580	29-Feb	5	1.7	0.0	3.1	55%
Little Antone (Alt.) Snow Course	4560	1-Mar	24	9.7	2.7	8.8	110%

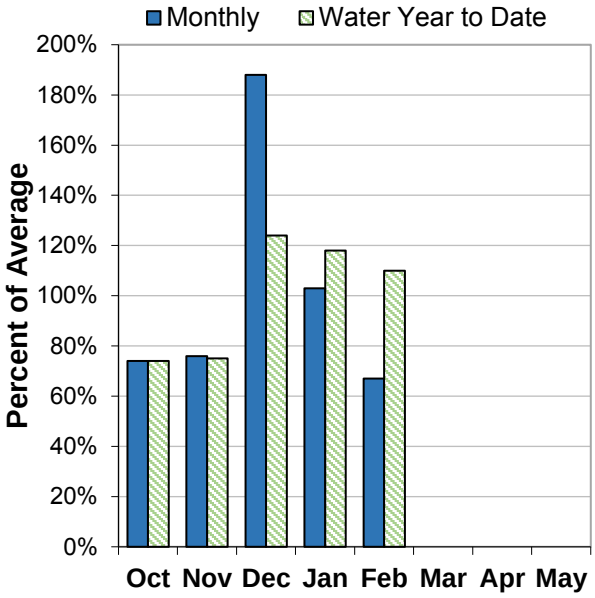
Upper Deschutes and Crooked Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 97% of normal. This is significantly lower than last month when the snowpack was 121% of normal.

PRECIPITATION

February precipitation was 67% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 110% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 88% of average at Wickiup Reservoir to 133% of average at Ochoco Reservoir.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 94% to 135% of average. Overall, forecasts decreased significantly from last month's report. However, water supplies in the basin are likely to be near normal to well above normal this summer.

Upper Deschutes And Crooked Basins Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Deschutes R bl Snow Ck	MAR-JUL	28	35	40	111%	45	52	36
	MAR-SEP	52	60	66	114%	71	80	58
	APR-JUL	24	30	34	113%	38	44	30
	APR-SEP	48	55	60	115%	65	72	52
Crane Prairie Reservoir Inflow[2]	MAR-JUL	57	66	73	111%	79	89	66
	MAR-SEP	87	99	106	109%	114	126	97
	APR-JUL	49	57	62	111%	68	76	56
	APR-SEP	79	89	96	109%	103	113	88
Crescent Lake Inflow[2]	MAR-JUL	12.5	17.6	21	122%	24	30	17.2
	MAR-SEP	16.2	21	25	128%	29	34	19.5
	APR-JUL	10.7	15.0	18.0	120%	21	25	15.0
	APR-SEP	14.6	19.0	22	126%	25	29	17.4
Little Deschutes R nr La Pine	MAR-JUL	79	92	100	130%	108	121	77
	MAR-SEP	90	103	112	135%	121	134	83
	APR-JUL	66	75	82	130%	89	98	63
	APR-SEP	73	85	93	135%	101	113	69
Deschutes R at Benham Falls[2]	MAR-JUL	390	415	430	109%	445	470	395
	MAR-SEP	555	585	605	108%	625	655	560
	APR-JUL	315	335	345	108%	355	375	320
	APR-SEP	490	515	530	109%	545	570	485
Wychus Ck nr Sisters	MAR-JUL	32	35	37	95%	39	42	39
	MAR-SEP	42	45	48	94%	50	53	51
	APR-JUL	28	31	33	94%	35	37	35
	APR-SEP	38	41	44	94%	46	49	47
Prineville Reservoir Inflow[2]	MAR-JUL	119	173	210	123%	245	300	171
	MAR-SEP	118	173	210	123%	245	300	171
	APR-JUL	55	93	119	117%	145	183	102
	APR-SEP	54	93	120	118%	147	186	102
Ochoco Reservoir Inflow[2]	MAR-JUL	27	35	40	121%	45	53	33
	MAR-SEP	27	35	40	125%	45	53	32
	APR-JUL	13.9	21	25	119%	29	36	21
	APR-SEP	12.9	19.5	24	120%	28	35	20

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Upper Deschutes And Crooked Basins Summary for March 1, 2016

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Crane Prairie	38.8	50.1	39.8	97%	55.3
Crescent Lake	52.7	74.4	47.5	111%	86.9
Ochoco	31.1	30.7	23.4	133%	44.2
Prineville	110.0	110.9	98.9	111%	148.6
Wickiup	154.6	194.4	176.1	88%	200.0

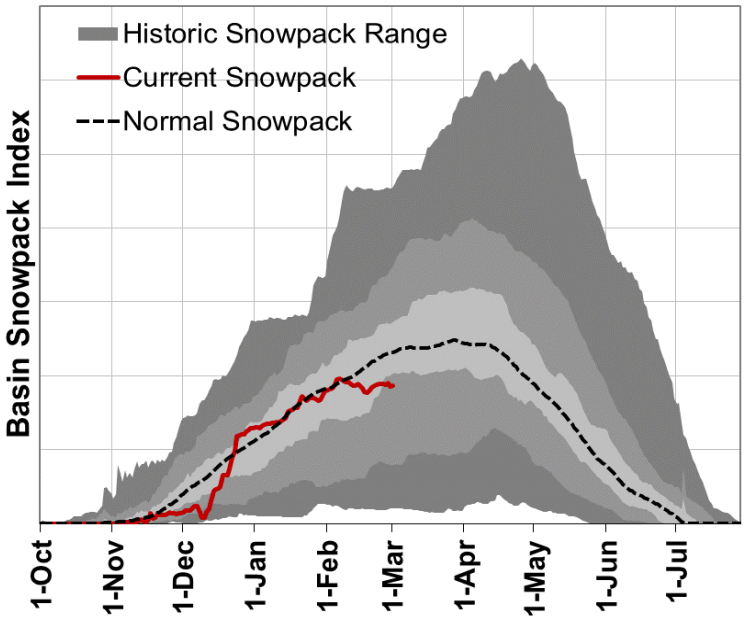
Snowpack Summary by Basin		Basin Snowpack % of Median	
	# of Sites	Current Yr	Last Yr
Little Deschutes Basin	4	113%	21%
Upper Crooked Basin	5	112%	25%
Upper Deschutes Basin	12	93%	21%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
New Dutchman #3 Snow Course	6320	1-Mar	98	40.4	19.4	39.6	102%
Snow Mountain SNOTEL	6230	1-Mar	26	12.7	4.7	9.8	130%
Derr Snow Course	5860	29-Feb	28	10.7	2.2	9.2	116%
Derr. SNOTEL	5850	1-Mar	45	18.5	6.9	12.8	145%
Three Creeks Meadow SNOTEL	5690	1-Mar	34	13.8	2.9	16.1	86%
Summit Lake SNOTEL	5610	1-Mar	81	35.4	9.7	31.2	113%
Irish Taylor SNOTEL	5540	1-Mar	69	27.7	9.4	30.8	90%
Tangent Snow Course	5470	1-Mar	44	18.0	1.8	18.1	99%
Ochoco Meadows SNOTEL	5430	1-Mar	23	10.0	0.5	10.0	100%
Ochoco Meadows Snow Course	5190	2-Mar	27	9.8	1.5	10.0	98%
Cascade Summit SNOTEL	5100	1-Mar	65	27.4	6.4	26.2	105%
Roaring River SNOTEL	4950	1-Mar	49	21.5	0.8	25.0	86%
New Crescent Lake SNOTEL	4910	1-Mar	39	12.0	0.2	12.0	100%
Chemult Alternate SNOTEL	4850	1-Mar	32	12.6	0.0	8.1	156%
Hogg Pass SNOTEL	4790	1-Mar	35	14.4	0.3	20.1	72%
McKenzie SNOTEL	4770	1-Mar	63	27.0	4.4	36.4	74%
Marks Creek Snow Course	4580	29-Feb	5	1.7	0.0	3.1	55%
Hungry Flat Snow Course	4400	1-Mar	0	0.0	0.2	2.1	0%
Salt Creek Falls SNOTEL	4220	1-Mar	38	16.1	0.2	16.3	99%
Santiam Jct. SNOTEL	3740	1-Mar	23	10.3	0.0	15.5	66%

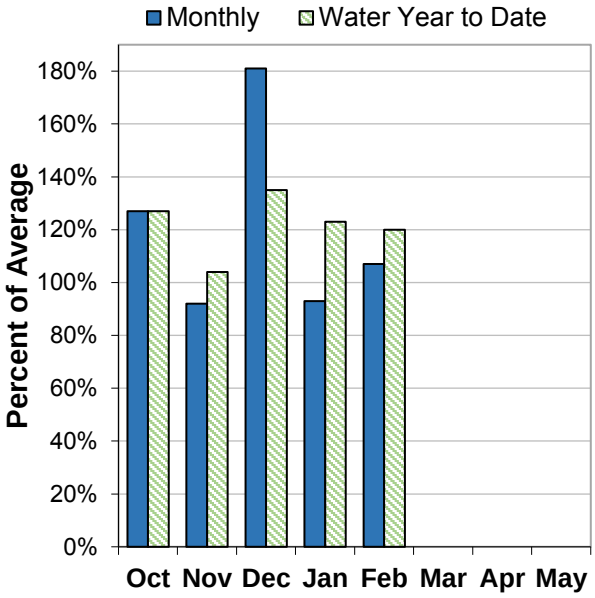
Hood, Sandy and Lower Deschutes Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 84% of normal. This is significantly lower than last month when the snowpack was 98% of normal. This basin has the second lowest snowpack in the state.

PRECIPITATION

February precipitation was 107% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 120% of average. Basin precipitation for the month and for the water year are the highest in state.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 96% to 101% of average. Overall, forecasts decreased slightly from last month's report. Water supplies in the basin are likely to be near normal this summer.

Hood, Sandy And Lower Deschutes Basins Summary for March 1, 2016

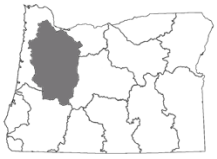
		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
WF Hood River nr Dee	APR-JUL	82	104	119	99%	134	156	120
	APR-SEP	100	125	141	101%	157	182	139
Hood R at Tucker Bridge	APR-JUL	171	205	225	100%	245	280	225
	APR-SEP	205	240	265	100%	290	325	265
Sandy R nr Marmot	APR-JUL	225	270	300	97%	325	370	310
	APR-SEP	270	315	345	96%	375	420	360

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Reservoir Storage	**Current (KAF)**	**Last Year (KAF)**	**Average (KAF)**	**% of Average**	**Useable Capacity (KAF)**
Clear Lake	2.6	5.3	3.8	67%	13.1

Snowpack Summary by Basin		**Basin Snowpack % of Median**	
	# of Sites	**Current Yr**	**Last Yr**
Lower Columbia - Sandy Basin	7	80%	10%
Lower Deschutes Basin	5	85%	20%
Middle Columbia - Hood Basin	8	92%	15%

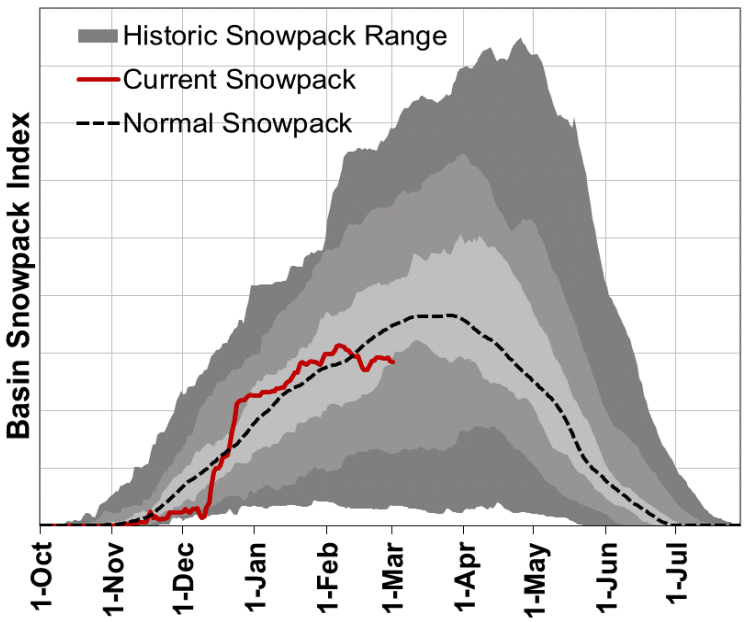
Basin Snowpack Measurement Sites	**Elevation (ft)**	**Date Measured**	**Depth (in)**	**Snow Water Equivalent (in) Current SWE**	**Last Yr SWE**	**Median**	**% of Median**
High Prairie Snow Course	6080	26-Feb	87	39.4	11.1	36.6	108%
Mt Hood Test Site SNOTEL	5370	1-Mar	99	39.4	14.7	48.0	82%
Red Hill SNOTEL	4410	1-Mar	69	35.9	0.7	41.7	86%
Mill Creek Meadow Snow Course	4400	26-Feb	24	9.0	0.0	11.7	77%
Surprise Lakes SNOTEL	4290	1-Mar	98	45.6	8.7	39.7	115%
Mud Ridge SNOTEL	4070	1-Mar	47	18.8	1.0	24.1	78%
Clear Lake SNOTEL	3810	1-Mar	18	7.2	0.0	12.4	58%
Blazed Alder SNOTEL	3650	1-Mar	45	19.6	0.0	25.0	78%
Clackamas Lake SNOTEL	3400	1-Mar	19	8.4	0.0	12.4	68%
Greenpoint SNOTEL	3310	1-Mar	34	15.9	0.0	18.0	88%
North Fork SNOTEL	3060	1-Mar	28	12.7	0.0	14.8	86%
South Fork Bull Run SNOTEL	2690	1-Mar	0	0.0	0.0	1.7	0%



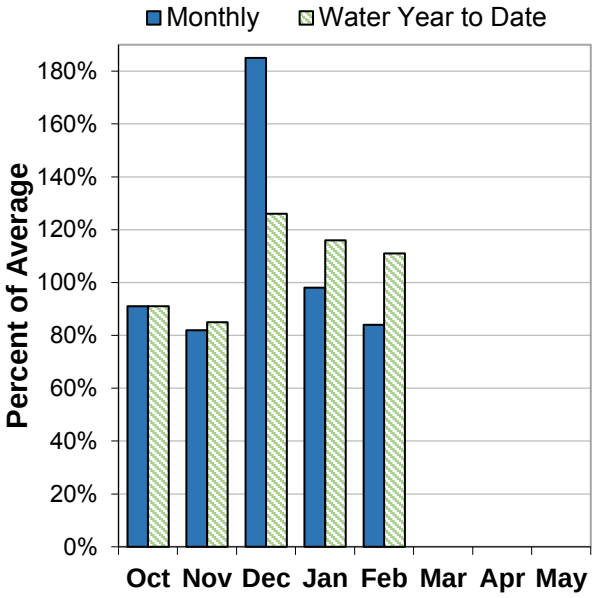
Willamette Basin

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 82% of normal. This is significantly lower than last month when the snowpack was 106% of normal. This basin has the lowest snowpack in the state.

PRECIPITATION

February precipitation was 84% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 111% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 35% of average at Cougar Reservoir to 112% of average at Lookout Point Reservoir.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 91% to 108% of average. Overall, forecasts decreased slightly from last month's report.

Willamette Basin Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Hills Creek Reservoir Inflow[1,2]	MAR-MAY	175	265	305	107%	345	435	285
	APR-JUL	172	255	295	107%	330	415	275
	APR-SEP	210	300	340	108%	380	465	315
MF Willamette R bl NF nr Oakridge[1,2]	MAR-MAY	460	670	765	107%	860	1070	715
	APR-JUL	455	655	745	107%	835	1040	695
	APR-SEP	545	755	850	108%	950	1160	790
Lookout Point Reservoir Inflow[1,2]	MAR-MAY	485	700	800	107%	900	1120	745
	APR-JUL	460	675	770	106%	870	1080	725
	APR-SEP	565	780	880	107%	980	1200	825
Fall Creek Reservoir Inflow[1,2]	MAR-MAY	75	127	151	111%	175	225	136
	APR-JUL	39	89	112	103%	135	185	109
	APR-SEP	45	95	118	104%	141	191	113
Cottage Grove Lake Inflow[1,2]	MAR-MAY	32	53	65	112%	78	110	58
	APR-JUL	16.8	34	43	105%	54	81	41
	APR-SEP	18.7	36	45	105%	56	83	43
Dorena Lake Inflow[1,2]	MAR-MAY	101	163	196	113%	230	320	174
	APR-JUL	63	114	142	104%	173	250	136
	APR-SEP	67	119	147	106%	179	260	139
McKenzie R bl Trail Bridge	MAR-MAY	168	191	210	95%	225	250	220
	APR-JUL	192	215	235	90%	255	285	260
	APR-SEP	260	290	315	91%	335	370	345
Cougar Lake Inflow[1,2]	MAR-MAY	135	185	210	100%	235	300	210
	APR-JUL	129	180	205	100%	235	300	205
	APR-SEP	152	205	235	100%	265	335	235
Blue Lake Inflow[1,2]	MAR-MAY	61	93	110	100%	128	173	110
	APR-JUL	42	69	84	100%	100	139	84
	APR-SEP	46	73	88	102%	104	143	86
McKenzie R nr Vida[1]	MAR-MAY	630	815	910	97%	1010	1240	940
	APR-JUL	635	825	920	95%	1020	1260	970
	APR-SEP	825	1040	1140	96%	1250	1510	1190
Detroit Lake Inlfow[1,2]	MAR-MAY	350	470	525	97%	580	700	540
	APR-JUL	340	450	505	95%	555	665	530
	APR-SEP	415	535	590	97%	645	765	610
Little North Santiam R nr Mehama[1]	MAR-MAY	102	139	156	99%	173	210	157
	APR-JUL	69	110	128	96%	146	187	133
	APR-SEP	78	118	137	97%	155	195	141

Willamette Basin Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
North Santiam R at Mehama[1]	MAR-MAY	480	675	770	97%	860	1060	790
	APR-JUL	500	635	695	94%	755	890	740
	APR-SEP	595	730	795	95%	860	995	840
Green Peter Lake Inflow[1,2]	MAR-MAY	225	305	350	101%	390	495	345
	APR-JUL	156	230	265	95%	305	405	280
	APR-SEP	173	245	285	97%	325	420	295
Foster Lake Inflow[1,2]	MAR-MAY	430	585	660	102%	740	940	645
	APR-JUL	290	430	500	94%	580	770	530
	APR-SEP	325	470	540	96%	620	810	565
South Santiam R at Waterloo[2]	MAR-MAY	510	625	705	101%	795	935	700
	APR-JUL	350	450	530	95%	610	740	555
	APR-SEP	390	495	570	97%	650	780	590
Willamette R at Salem[1,2]	MAR-MAY	3560	4790	5410	105%	6070	7650	5170
	APR-JUL	2680	3830	4430	103%	5060	6620	4310
	APR-SEP	3070	4270	4880	103%	5530	7100	4730
Scoggins Reservoir Inflow[2]	MAR-JUL	20	26	30	120%	33	39	25
Oak Grove Fk ab Powerplant	APR-JUL	94	109	119	103%	129	144	115
	APR-SEP	125	142	154	99%	166	183	155
Clackamas R above Three Lynx	APR-JUL	325	380	420	93%	460	515	450
	APR-SEP	400	460	500	93%	545	600	535
Clackamas R at Estacada	APR-JUL	430	515	575	92%	635	720	625
	APR-SEP	525	615	675	92%	735	825	730

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	**Current (KAF)**	**Last Year (KAF)**	**Average (KAF)**	**% of Average**	**Useable Capacity (KAF)**
Blue River	37.5	22.3	34.6	108%	82.3
Cottage Grove	12.2	9.6	11.0	111%	31.8
Cougar	29.7	49.0	85.4	35%	174.9
Detroit	278.5	215.1	252.3	110%	426.8
Dorena	24.3	18.1	26.5	92%	72.1
Fall Creek	28.6	32.0	50.3	57%	116.0
Fern Ridge	39.5	43.1	42.5	93%	97.3
Foster	25.8	19.9	27.7	93%	46.2
Green Peter	278.6	239.8	264.2	105%	402.8
Hills Creek	171.7	150.9	154.3	111%	279.2
Lookout Point	241.1	147.5	216.2	112%	433.2
Timothy Lake	56.2	55.1	51.2	110%	63.6
Henry Hagg Lake	47.9	47.6	45.2	106%	53.3

Willamette Basin Summary for March 1, 2016

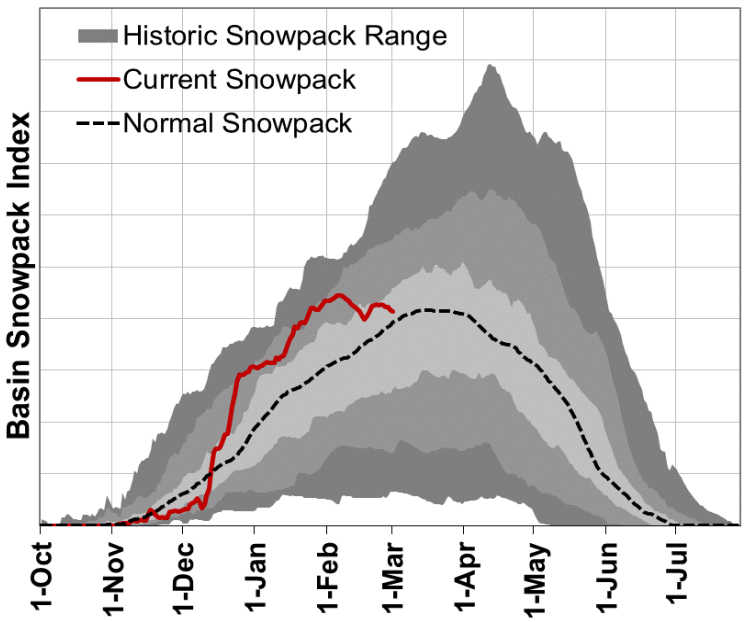
Snowpack Summary by Basin		Basin Snowpack % of Median	
	# of Sites	Current Yr	Last Yr
Clackamas Basin	11	84%	11%
McKenzie Basin	17	97%	22%
Middle Fork Willamette Basin	7	98%	18%
North Santiam Basin	4	70%	0%
South Santiam Basin	4	65%	0%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	Median	% of Median
Summit Lake SNOTEL	5610	1-Mar	81	35.4	9.7	31.2	113%
Irish Taylor SNOTEL	5540	1-Mar	69	27.7	9.4	30.8	90%
Cascade Summit SNOTEL	5100	1-Mar	65	27.4	6.4	26.2	105%
Roaring River SNOTEL	4950	1-Mar	49	21.5	0.8	25.0	86%
Holland Meadows SNOTEL	4930	1-Mar	34	16.4	0.6	18.0	91%
McKenzie SNOTEL	4770	1-Mar	63	27.0	4.4	36.4	74%
Bear Grass SNOTEL	4720	1-Mar	73	36.8	0.7		
Salt Creek Falls SNOTEL	4220	1-Mar	38	16.1	0.2	16.3	99%
Mud Ridge SNOTEL	4070	1-Mar	47	18.8	1.0	24.1	78%
Little Meadows SNOTEL	4020	1-Mar	42	20.1	0.0	21.2	95%
Clear Lake SNOTEL	3810	1-Mar	18	7.2	0.0	12.4	58%
Santiam Jct. SNOTEL	3740	1-Mar	23	10.3	0.0	15.5	66%
Daly Lake SNOTEL	3690	1-Mar	9	4.2	0.0	11.3	37%
Marys Peak (Rev.) Snow Course	3580	1-Mar	0	0.0	0.0	2.3	0%
Jump Off Joe SNOTEL	3520	1-Mar	12	4.7	0.0	11.2	42%
Peavine Ridge SNOTEL	3420	1-Mar	13	6.4	0.0	11.2	57%
Clackamas Lake SNOTEL	3400	1-Mar	19	8.4	0.0	12.4	68%
Smith Ridge SNOTEL	3270	1-Mar	0	0.0	0.0		
Saddle Mountain SNOTEL	3110	1-Mar	0	0.0	0.0		
Railroad Overpass SNOTEL	2680	1-Mar	0	0.0	0.0	0.0	
Marion Forks SNOTEL	2590	1-Mar	8	4.1	0.0	7.5	55%
Seine Creek SNOTEL	2060	1-Mar	0	0.0	0.0	0.0	
Miller Woods SNOTEL	420	1-Mar	0	0.0	0.0		

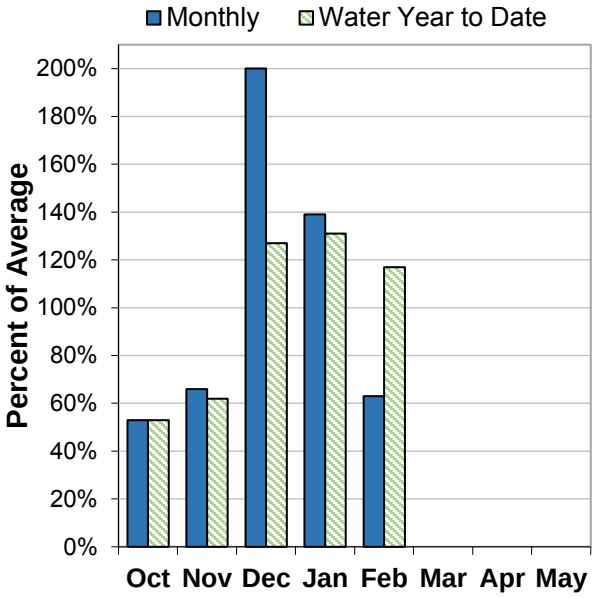
Rogue and Umpqua Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 103% of normal. This is significantly lower than last month when the snowpack was 140% of normal.

PRECIPITATION

February precipitation was 63% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 117% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 50% of average at Fourmile Lake to 115% of average at Applegate Reservoir.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 103% to 109% of average. Overall, forecasts decreased significantly from last month's report. However, water supplies in the basin are likely to be near normal to above normal this summer.

Rogue And Umpqua Basins Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Hyatt Reservoir Inflow[2]	APR-JUL	0.46	2.4	3.7	103%	5.0	6.9	3.6
South Umpqua R at Tiller	APR-JUL	114	165	200	104%	235	285	193
	APR-SEP	124	175	210	105%	245	295	200
Cow Ck nr Azalea[2]	MAR-JUL	8.8	19.0	26	104%	33	43	25
	APR-JUL	5.3	11.7	16.0	109%	20	27	14.7
	APR-SEP	6.2	12.8	17.3	109%	22	28	15.9
South Umpqua R nr Brockway	APR-JUL	205	330	415	106%	500	625	390
	APR-SEP	225	350	435	106%	520	645	410
North Umpqua R at Winchester	APR-JUL	555	710	810	105%	910	1060	775
	APR-SEP	675	830	935	105%	1040	1200	890
Lost Creek Lk Inflow[2]	MAR-JUL	535	620	680	102%	740	825	665
	MAR-SEP	645	740	805	102%	870	965	790
	APR-JUL	425	490	535	103%	580	645	520
	APR-SEP	540	615	665	103%	715	790	645
Rogue R at Raygold[2]	APR-JUL	480	620	715	106%	810	950	675
	APR-SEP	610	755	855	106%	955	1100	805
Rogue R at Grants Pass[2]	APR-JUL	500	660	770	106%	880	1040	725
	APR-SEP	610	785	900	107%	1020	1190	845
Applegate Lake Inflow[2]	MAR-JUL	96	134	160	103%	186	225	155
	MAR-SEP	101	140	166	103%	192	230	161
	APR-JUL	70	95	112	103%	129	154	109
	APR-SEP	75	101	118	103%	135	161	115
Sucker Ck bl Ltl Grayback Ck nr Holland	APR-JUL	36	50	60	109%	70	84	55
	APR-SEP	40	54	64	108%	74	88	59
Illinois R nr Kerby	APR-JUL	92	156	200	106%	245	310	188
	APR-SEP	97	161	205	106%	250	315	193

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Rogue And Umpqua Basins Summary for March 1, 2016

Reservoir Storage	Current (KAF)	Last Year (KAF)	Average (KAF)	% of Average	Useable Capacity (KAF)
Applegate	28.7	28.5	25.0	115%	75.2
Emigrant Lake	25.3	26.1	27.2	93%	39.0
Fish Lake	3.2	4.2	5.0	65%	7.9
Fourmile Lake	3.7	6.5	7.5	50%	15.6
Howard Prairie	22.3	26.4	37.9	59%	62.1
Hyatt Prairie	5.6	5.9	10.9	51%	16.2
Lost Creek	230.8	227.4	219.0	105%	315.0

Snowpack Summary by Basin		Basin Snowpack % of Median	
	# of Sites	Current Yr	Last Yr
Applegate Basin	5	102%	20%
Middle Rogue Basin	8	102%	16%
North Umpqua Basin	9	105%	12%
South Umpqua Basin	10	93%	1%
Upper Rogue Basin	11	105%	19%

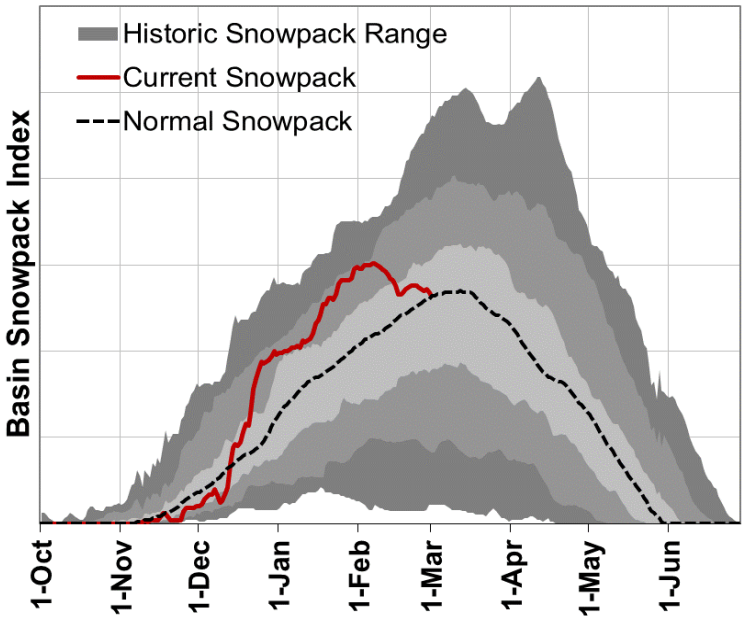
Rogue And Umpqua Basins Summary for March 1, 2016

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	Median	% of Median
Park H.Q. Rev Snow Course	6570	26-Feb	119	53.6	23.2	53.2	101%
Caliban (Alt.) Snow Course	6500	29-Feb	54	27.1	6.8	25.2	108%
Mt. Ashland Switchback Snow Course	6430	29-Feb	62	25.3	5.3	27.6	92%
Ski Bowl Road Snow Course	6070	29-Feb	53	21.8	1.5	21.0	104%
Big Red Mountain SNOTEL	6050	1-Mar	61	24.4	7.4	22.6	108%
Annie Springs SNOTEL	6010	1-Mar	91	38.2	12.4	35.1	109%
Fourmile Lake SNOTEL	5970	1-Mar	75	28.5	5.6	27.2	105%
Cold Springs Camp SNOTEL	5940	1-Mar	59	25.4	1.1	29.9	85%
Sevenmile Marsh SNOTEL	5700	1-Mar	69	28.2	0.3	28.7	98%
Summit Lake SNOTEL	5610	1-Mar	81	35.4	9.7	31.2	113%
Billie Creek Divide SNOTEL	5280	1-Mar	62	28.4	1.4	20.6	138%
Diamond Lake SNOTEL	5280	1-Mar	29	15.0	0.2	15.6	96%
Bigelow Camp SNOTEL	5130	1-Mar	25	10.4	0.0	10.6	98%
Beaver Dam Creek Snow Course	5120	29-Feb	24	11.1	0.0	10.9	102%
King Mountain 1 Snow Course	4760	1-Mar	13	5.3	0.0	5.0	106%
Deadwood Junction Snow Course	4660	29-Feb	18	8.5	0.0	6.8	125%
Fish Lk. SNOTEL	4660	1-Mar	36	13.8	1.0	10.7	129%
Howard Prairie SNOTEL	4580	1-Mar	12	5.6	0.3		
Howard Prairie Snow Course	4580	29-Feb	10	3.2	0.0	6.6	48%
Siskiyou Summit Rev. Snow Course	4560	29-Feb	18	7.4	0.0	5.4	137%
Red Butte 1 Snow Course	4460	29-Feb	24	10.0	0.0	9.8	102%
King Mountain SNOTEL	4340	1-Mar	2	1.1	0.2	2.4	46%
North Umpqua Snow Course	4200	25-Feb	30	11.6	0.0	10.4	112%
Red Butte 2 Snow Course	4050	29-Feb	0	0.0	0.0	2.9	0%
Trap Creek Snow Course	3830	26-Feb	32	11.4	0.0	8.8	130%
Silver Burn Snow Course	3680	26-Feb	37	13.8	0.0	11.5	120%
King Mountain 3 Snow Course	3680	1-Mar	0	0.0	0.0	0.0	
Red Butte 3 Snow Course	3500	29-Feb	0	0.0	0.0	0.1	0%
Toketee Airstrip SNOTEL	3240	1-Mar	0	0.0	0.0	0.8	0%
King Mountain 4 Snow Course	3050	1-Mar	0	0.0	0.0	0.0	
Red Butte 4 Snow Course	3000	29-Feb	0	0.0	0.0	0.0	

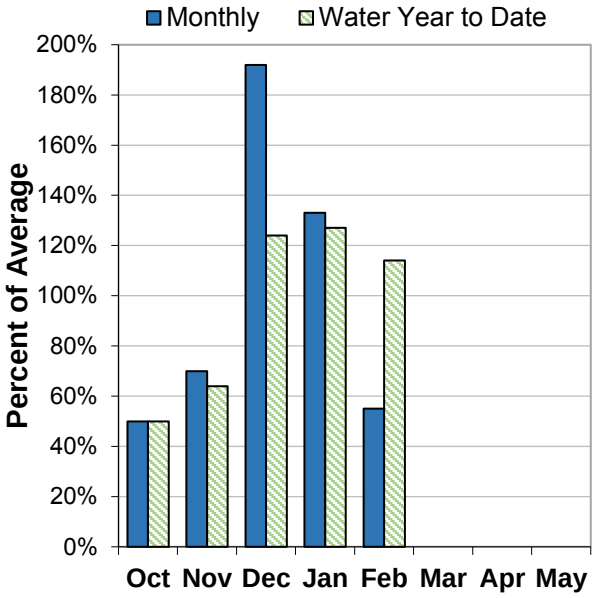
Klamath Basin

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 101% of normal. This is significantly lower than last month when the snowpack was 135% of normal. Snowpack conditions vary greatly across the basin: high-elevation sites (more than 6000 ft elevation) and those on the west side of the basin (Cascade Mtns) are near normal to above normal while the snowpack in the rest of the basin is well below normal.

PRECIPITATION

February precipitation was 55% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 114% of average.

RESERVOIR

As of March 1, storage at major reservoirs in the basin ranges from 38% of average at Clear Lake to 111% of average at Upper Klamath Lake.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 76% to 89% of average. Overall, forecasts decreased significantly from last month's report. Water supplies in the basin are likely to be well below normal to below normal this summer.

Klamath Basin Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Gerber Resvervoir Inflow[2]	MAR-JUL	2.4	15.5	26	81%	33	46	32
	APR-SEP	0.43	4.8	11.0	76%	15.7	24	14.4
Sprague R nr Chiloquin	MAR-JUL	115	171	220	86%	250	305	255
	MAR-SEP	132	191	240	87%	270	330	275
	APR-SEP	94	143	183	87%	210	255	210
Williamson bl Sprague nr Chiloquin	MAR-JUL	215	280	355	89%	370	435	400
	MAR-SEP	265	335	410	89%	425	495	460
	APR-SEP	205	260	315	89%	330	385	355
Upper Klamath Lake Inflow[1,2]	MAR-JUL	255	390	495	85%	515	655	580
	MAR-SEP	305	455	565	86%	590	740	655
	APR-SEP	230	335	410	85%	425	530	480

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

Reservoir Storage	**Current (KAF)**	**Last Year (KAF)**	**Average (KAF)**	**% of Average**	**Useable Capacity (KAF)**
Clear Lake	82.7	44.6	217.4	38%	513.3
Gerber	31.2	15.5	50.3	62%	94.3
Upper Klamath Lake	410.8	434.0	370.9	111%	523.7

Snowpack Summary by Basin		**Basin Snowpack % of Median**	
	# of Sites	**Current Yr**	**Last Yr**
Lost Basin	5	25%	1%
Sprague Basin	8	86%	9%
Upper Klamath Lake Basin	8	105%	21%
Williamson River Basin	5	103%	30%

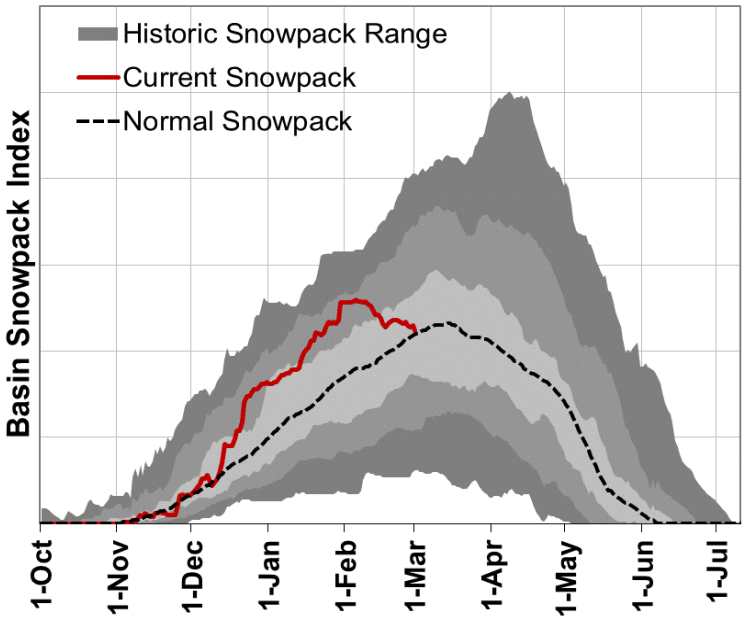
Klamath Basin Summary for March 1, 2016

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Summer Rim SNOTEL	7080	1-Mar	34	14.3	6.5	14.1	101%
Swan Lake Mtn SNOTEL	6830	1-Mar	56	25.7	7.2		
Park H.Q. Rev Snow Course	6570	26-Feb	119	53.6	23.2	53.2	101%
Colvin Creek AM	6520	29-Feb	0	0.0	0.0	2.9	0%
Crazyman Flat SNOTEL	6180	1-Mar	34	15.0	0.1	14.8	101%
Ski Bowl Road Snow Course	6070	29-Feb	53	21.8	1.5	21.0	104%
Annie Springs SNOTEL	6010	1-Mar	91	38.2	12.4	35.1	109%
Finley Corrals AM	6000	1-Mar	32	12.8	0.0	13.2	97%
Fourmile Lake SNOTEL	5970	1-Mar	75	28.5	5.6	27.2	105%
Cold Springs Camp SNOTEL	5940	1-Mar	59	25.4	1.1	29.9	85%
Strawberry SNOTEL	5770	1-Mar	4	1.7	0.1	4.3	40%
Cox Flat AM	5750	1-Mar	8	3.1	0.0	5.8	53%
Silver Creek SNOTEL	5740	1-Mar	21	10.1	0.4	10.3	98%
Quartz Mountain SNOTEL	5720	1-Mar	0	0.0	0.3	1.5	0%
Sevenmile Marsh SNOTEL	5700	1-Mar	69	28.2	0.3	28.7	98%
State Line AM	5690	29-Feb	3	1.2	0.0	4.3	28%
State Line SNOTEL	5680	1-Mar	11	6.1	0.0		
Sycan Flat AM	5580	29-Feb	10	4.8	0.0	6.2	77%
Sun Pass SNOTEL	5400	1-Mar	53	22.5	0.0		
Billie Creek Divide SNOTEL	5280	1-Mar	62	28.4	1.4	20.6	138%
Diamond Lake SNOTEL	5280	1-Mar	29	15.0	0.2	15.6	96%
Crowder Flat SNOTEL	5170	1-Mar	1	0.4	0.0	4.0	10%
Beaver Dam Creek Snow Course	5120	29-Feb	24	11.1	0.0	10.9	102%
Taylor Butte SNOTEL	5030	1-Mar	7	3.7	0.0	7.0	53%
Dog Hollow AM	4920	29-Feb	0	0.0	0.0	0.0	
Gerber Reservoir SNOTEL	4890	1-Mar	0	0.0	0.0	0.5	0%
Chemult Alternate SNOTEL	4850	1-Mar	32	12.6	0.0	8.1	156%
Deadwood Junction Snow Course	4660	29-Feb	18	8.5	0.0	6.8	125%
Fish Lk. SNOTEL	4660	1-Mar	36	13.8	1.0	10.7	129%
Howard Prairie SNOTEL	4580	1-Mar	12	5.6	0.3		
Howard Prairie Snow Course	4580	29-Feb	10	3.2	0.0	6.6	48%
Siskiyou Summit Rev. Snow Course	4560	29-Feb	18	7.4	0.0	5.4	137%

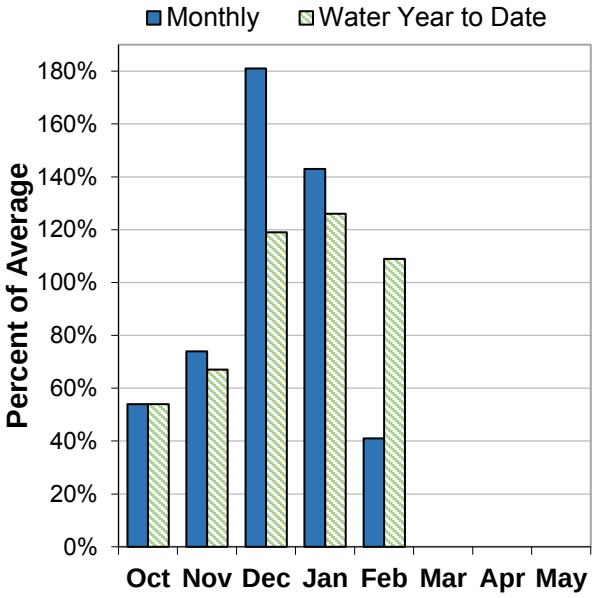
Lake County and Goose Lake Basins

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 95% of normal. This is significantly lower than last month when the snowpack was 146% of normal.

PRECIPITATION

February precipitation was 41% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 109% of average.

RESERVOIR

Reservoir storage across the basin is currently well below average. As of March 1, storage at major reservoirs in the basin ranges from 67% of average at Drews Reservoir to 74% of average at Cottonwood Reservoir.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 93% to 109% of average. Overall, forecasts decreased significantly from last month's report.

Lake County And Goose Lake Basins Summary for March 1, 2016

		Forecast Exceedance Probabilities for Risk Assessment *						
		←--------Drier----------Future Conditions--------Wetter--------→						
Streamflow Forecasts March 1, 2016	**Forecast Period**	**90% (KAF)**	**70% (KAF)**	**50% (KAF)**	**50% % Avg**	**30% (KAF)**	**10% (KAF)**	**Average (KAF)**
Twentymile Ck nr Adel	MAR-JUL	10.6	22	30	111%	38	49	27
	APR-SEP	5.0	13.4	19.0	109%	25	33	17.4
Deep Ck ab Adel	MAR-JUL	50	67	79	100%	91	108	79
	APR-SEP	39	54	64	98%	74	89	65
Honey Ck nr Plush	MAR-JUL	9.4	14.1	17.3	101%	20	25	17.1
	APR-SEP	6.2	10.9	14.0	99%	17.1	22	14.1
Chewaucan R nr Paisley	MAR-JUL	53	69	80	95%	91	107	84
	APR-SEP	46	60	70	93%	80	94	75

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Reservoir Storage	**Current (KAF)**	**Last Year (KAF)**	**Average (KAF)**	**% of Average**	**Useable Capacity (KAF)**
Cottonwood	3.3	3.7	4.4	74%	9.3
Drews	21.6	11.2	32.4	67%	63.5

Snowpack Summary by Basin		**Basin Snowpack % of Median**	
	# of Sites	**Current Yr**	**Last Yr**
Goose Lake Basin	8	85%	21%
Lake Abert Basin	7	79%	10%
Summer Lake Basin	13	95%	22%
Upper Pit Basin	3	123%	13%

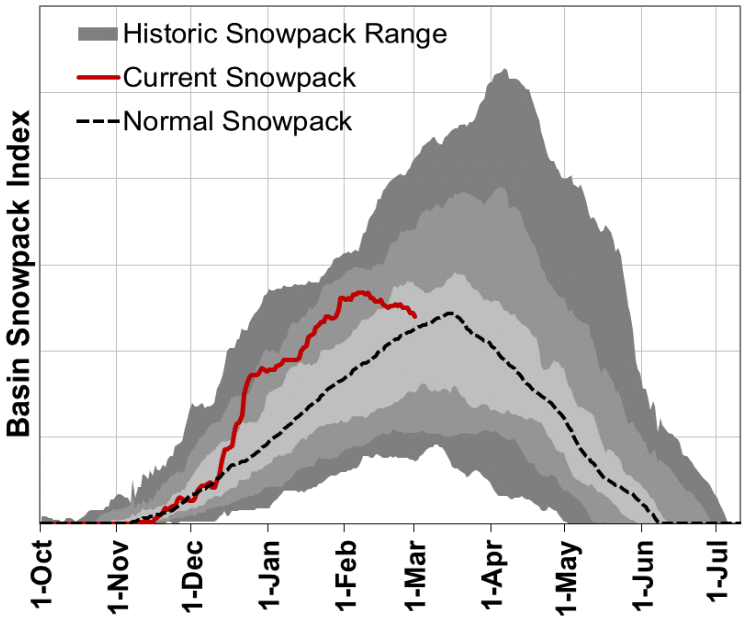
Lake County And Goose Lake Basins Summary for March 1, 2016

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in)			
				Current SWE	Last Yr SWE	Median	% of Median
Dismal Swamp SNOTEL	7360	1-Mar	69	28.8	14.0	24.5	118%
Summer Rim SNOTEL	7080	1-Mar	34	14.3	6.5	14.1	101%
Cedar Pass SNOTEL	7030	1-Mar	45	18.6	3.5	14.2	131%
Barley Camp AM	6890	29-Feb	40	16.0	2.9	14.4	111%
Patton Meadows AM	6800	1-Mar	33	13.2	1.6	14.4	92%
Sherman Valley AM	6640	1-Mar	20	7.2	0.0	11.3	64%
Bear Flat Meadow AM	6580	29-Feb	17	6.8	0.0	11.2	61%
Colvin Creek AM	6520	29-Feb	0	0.0	0.0	2.9	0%
Hart Mountain AM	6430	1-Mar	1	0.4	0.7	1.0	40%
Rogger Meadow AM	6360	1-Mar	20	7.2	2.0	10.1	71%
Adin Mtn Snow Course	6190	29-Feb	38	14.7	0.0	10.6	139%
Adin Mtn SNOTEL	6190	1-Mar	35	16.7	0.4	10.9	153%
Crazyman Flat SNOTEL	6180	1-Mar	34	15.0	0.1	14.8	101%
Finley Corrals AM	6000	1-Mar	32	12.8	0.0	13.2	97%
Camas Creek #3 Snow Course	5860	29-Feb	31	11.2	0.4	11.4	98%
Sheldon SCAN	5860	1-Mar	0	0.0	0.1	0.0	
Strawberry SNOTEL	5770	1-Mar	4	1.7	0.1	4.3	40%
Cox Flat AM	5750	1-Mar	8	3.1	0.0	5.8	53%
Silver Creek SNOTEL	5740	1-Mar	21	10.1	0.4	10.3	98%
State Line AM	5690	29-Feb	3	1.2	0.0	4.3	28%
State Line SNOTEL	5680	1-Mar	11	6.1	0.0		
Sycan Flat AM	5580	29-Feb	10	4.8	0.0	6.2	77%
Crowder Flat SNOTEL	5170	1-Mar	1	0.4	0.0	4.0	10%

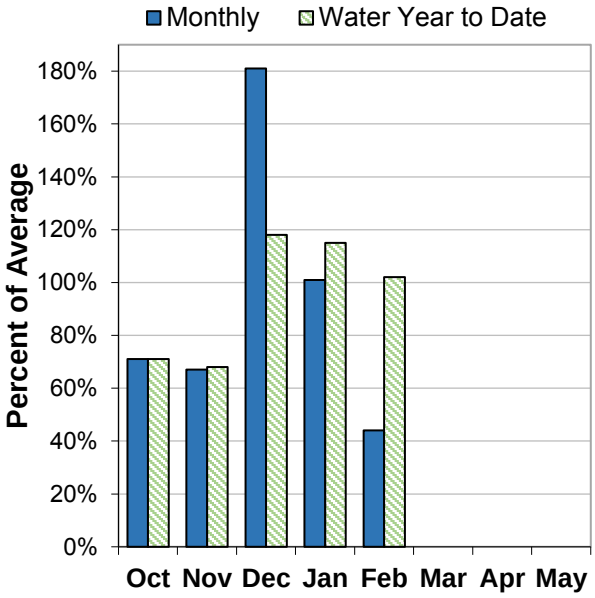
Harney Basin

March 1, 2016

Mountain Snowpack



Basin Precipitation



Summary of Water Supply Conditions

SNOWPACK

As of March 1, the basin snowpack was 107% of normal. This is significantly lower than last month when the snowpack was 149% of normal. This basin has the highest snowpack in the state.

PRECIPITATION

February precipitation was 44% of average. Precipitation since the beginning of the water year (October 1 - March 1) has been 102% of average.

STREAMFLOW FORECAST

As of March 1, summer streamflow forecasts in the basin range from 99% to 123% of average. Overall, forecasts decreased significantly from last month's report. However, water supplies in the basin are likely to be near normal to well above normal this summer.

Harney Basin Summary for March 1, 2016

Forecast Exceedance Probabilities for Risk Assessment *

Streamflow Forecasts March 1, 2016	Forecast Period	←--------Drier----------Future Conditions--------Wetter--------→ 90% (KAF)	70% (KAF)	50% (KAF)	50% % Avg	30% (KAF)	10% (KAF)	Average (KAF)
Silvies R nr Burns	MAR-JUL	57	99	128	104%	157	199	123
	APR-SEP	30	69	96	104%	123	162	92
Donner Und Blitzen R nr Frenchglen	MAR-JUL	44	60	72	100%	83	100	72
	APR-SEP	40	56	67	99%	78	95	68
Trout Ck nr Denio	MAR-JUL	5.5	8.5	10.6	122%	12.7	15.7	8.7
	APR-SEP	4.6	7.7	9.8	123%	11.9	15.0	8.0

* 90%, 70%, 50%, 30% & 10% exceedance probabilities are the chance that observed streamflow volume will exceed the forecasted volume

Snowpack Summary by Basin	# of Sites	Basin Snowpack % of Median Current Yr	Last Yr
Alvord Lake Basin	6	107%	59%
Donner und Blitzen River Basin	5	115%	56%
Silvies River Basin	4	104%	33%
Upper Quinn Basin	5	95%	34%

Basin Snowpack Measurement Sites	Elevation (ft)	Date Measured	Depth (in)	Snow Water Equivalent (in) Current SWE	Last Yr SWE	Median	% of Median
Granite Peak SNOTEL	8543	1-Mar	51	19.0	10.2	18.3	104%
Trout Creek AM	7890	1-Mar	24	9.8	8.1	11.5	85%
Fish Creek SNOTEL	7660	1-Mar	60	30.0	20.0	21.3	141%
Govt Corrals AM	7400	1-Mar	33	13.6	7.4		
Oregon Canyon AM	7050	29-Feb	12	4.8	0.0	5.8	83%
Silvies SNOTEL	6990	1-Mar	32	12.6	3.8	14.6	86%
Pueblo Summit AM	6970	29-Feb	0	0.0	0.0	2.4	0%
Buckskin Lower SNOTEL	6915	1-Mar	26	11.2	0.5	8.1	138%
V Lake AM	6600	1-Mar	15	5.9	0.4	5.6	105%
Louse Canyon AM	6530	29-Feb	18	7.0	0.0	4.2	167%
Disaster Peak SNOTEL	6500	1-Mar	10	3.8	0.4	7.6	50%
Hart Mountain AM	6430	1-Mar	1	0.4	0.7	1.0	40%
Quinn Ridge AM	6270	29-Feb	4	1.6	0.0	2.0	80%
Snow Mountain SNOTEL	6230	1-Mar	26	12.7	4.7	9.8	130%
Lamance Creek SNOTEL	6000	1-Mar	18	7.4	0.0	11.0	67%
Blue Mountain Spring SNOTEL	5870	1-Mar	40	15.4	7.2	14.4	107%
Sheldon SCAN	5860	1-Mar	0	0.0	0.1	0.0	
Buck Pasture AM	5740	29-Feb	3	1.2	0.0	1.6	75%
Call Meadows AM	5380	29-Feb	12	4.4	0.0	4.4	100%
Rock Springs SNOTEL	5290	1-Mar	13	5.1	0.8	6.2	82%
Starr Ridge SNOTEL	5250	1-Mar	12	5.4	0.7	6.2	87%
Lake Creek R.S. SNOTEL	5240	1-Mar	27	10.7	4.4	10.3	104%
Buckskin Lake AM	5190	29-Feb	0	0.0	0.0	0.0	

Recession Forecasts for Oregon

Recession flow forecasts are presented below for key streamflow sites where reliable daily streamflow data are available. The recession flow forecasts use exceedance probabilities in a format similar to the standard water supply forecasts presented in this document. Each forecast provides a range of possible outcomes representing the uncertainty of forecasting models.

The types of forecasts in the table below are:
1) Threshold flow -- Date that the daily streamflow rate falls below the given threshold flow
2) Peak flow -- Maximum daily flow
3) Date of peak flow -- Date of occurrence of maximum daily flow
4) Average daily flow on a given date

OWYHEE AND MALHEUR BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Owyhee R nr Rome	2000 cfs	Mar 27	May 8	Jun 19	**May 6**
Owyhee R nr Rome	1000 cfs	Apr 7	May 20	Jul 2	**May 18**
Owyhee R nr Rome	500 cfs	Apr 26	Jun 7	Jul 18	**Jun 2**

UPPER JOHN DAY BASIN					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
John Day R at Service Creek	Average Daily Flow on Aug. 1st	69	290	515	**271**

UPPER DESCHUTES AND CROOKED BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ---------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Crane Prairie Inflow *	Date of Peak	May 9	May 25	Jun 10	**May 25**
Crane Prairie Inflow	Peak Flow	295	435	570	**403**
Crane Prairie Inflow	Average Daily Flow on Oct. 1st	235	285	330	**269**
Prineville Reservoir Inflow	150 cfs	May 17	Jun 9	Jul 2	**May 30**
Prineville Reservoir Inflow	80 cfs	May 28	Jun 22	Jul 17	**June 7**
Whychus Creek nr Sisters	100 cfs	Jul 28	Aug 22	Sep 16	**August 16**

*No prediction possible until April 1. Historic values are shown for reference prior to the April 1 report.

ROGUE AND UMPQUA BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ----------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
South Umpqua R nr Brockway *	90 cfs	Jul 23	Aug 12	Sep 1	**August 8**
South Umpqua R at Tiller	140 cfs	Jun 24	Jul 15	Aug 7	**July 11**
South Umpqua R at Tiller	90 cfs	Jul 16	Aug 7	Aug 27	**August 1**
South Umpqua R at Tiller	60 cfs	Aug 2	Sep 1	Oct 1	**August 28**

*Dates are based on streamflow data adjusted for releases from Galesville Reservoir to reflect natural flow conditions and do not match observed gage data. There is an approximately 20% chance in any given year that the flow will not recede below 90 cfs; the dates given here are for the event that the flow does recede below 90 cfs.

LAKE COUNTY AND GOOSE LAKE BASINS					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ----------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Deep Ck ab Adel	100 cfs	May 27	Jun 18	Jul 10	**June 17**
Honey Ck nr Plush	100 cfs	Apr 10	May 13	Jun 15	**May 16**
Honey Ck nr Plush	50 cfs	Apr 28	May 28	Jun 27	**June 4**
Twentymile Ck nr Adel	50 cfs	Apr 30	May 26	Jun 21	**May 30**
Twentymile Ck nr Adel	10 cfs	Jun 13	Jul 6	Jul 28	**July 7**

HARNEY BASIN					
FORECAST POINT	*FORECAST THRESHOLD*	*FORECAST VALUE ---------- CHANCE OF EXCEEDING ----------*			*LONG-TERM AVERAGE VALUE*
		90%	*50%*	*10%*	
Silvies R nr Burns	400 cfs	Apr 17	May 16	Jun 14	**May 21**
Silvies R nr Burns	200 cfs	Apr 30	May 29	Jun 27	**June 2**
Silvies R nr Burns	100 cfs	May 13	Jun 14	Jul 16	**June 13**
Silvies R nr Burns	50 cfs	Jun 2	Jul 7	Aug 12	**July 3**
Donner Und Blitzen R nr Frenchglen	200 cfs	May 29	Jun 20	Jul 12	**June 20**
Donner Und Blitzen R nr Frenchglen	100 cfs	Jun 20	Jul 10	Jul 28	**July 9**

Basin Outlook Reports: How Forecasts Are Made

Federal – State – Private
Cooperative Snow Surveys

For more water supply and resource management information, contact:

USDA, Natural Resources Conservation Service
Snow Survey Office
1201 NE Lloyd Suite 900
Portland, OR 97232
Phone: (503) 414-3271
Web site ***http://www.or.nrcs.usda.gov/snow***

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertainty is in the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount. By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Interpreting Water Supply Forecasts

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1981-2010. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for: A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for: A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the Forecasts - an Example

Using the 50 Percent Exceedance Forecast. Using the example forecasts shown on the next page, there is a 50% chance that actual streamflow volume at the Mountain Creek near Mitchell will be less than 4.4 KAF between April 1 and Sept 30. There is also a 50% chance that actual streamflow volume will be greater than 4.4 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users

might want to plan on receiving 3.3 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 3.3 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 1.7 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 1.7 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 5.5 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 5.5 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 7.1 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 7.1 KAF.

JOHN DAY BASIN
Streamflow Forecasts - February 1, 2013

Forecast Point	Forecast Period	<<====== Drier ====== 90% (1000AF)	70% (1000AF)	Future Conditions ======= 50% (1000AF)	50% (% AVG.)	Wetter =====>> 30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Strawberry Ck nr Prairie City	MAR-JUL	5.0	6.6	7.6	89	8.6	10.2	8.5
	APR-SEP	5.2	6.8	7.9	90	9.0	10.6	8.8
Mountain Ck nr Mitchell	FEB-JUL	3.2	5.4	6.9	99	8.4	10.6	7.0
	APR-SEP	1.7	3.3	4.4	90	5.5	7.1	4.9

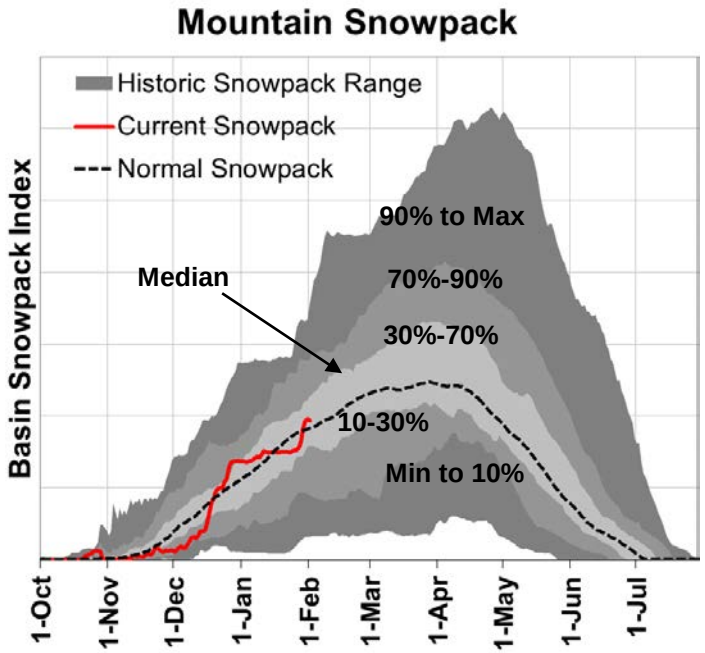
** 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.*

Interpreting Snowpack Plots

The basin snowpack plots display an index calculated using daily SNOTEL data for many sites in each basin. They show how the current year's snowpack data compares to historical data in the basin. The "Current Snowpack" line can be compared with the "Normal Snowpack" (median) line, as well as the historic range for the basin. This gives users important context about the current year and historic variability of snowpack in the basin.

The grey shaded areas represent different percentiles of the historical range of the snowpack index for each day. The dark grey shading indicates the extreme lows and highs in the SNOTEL record (minimum to the 10th percentile and the 90th percentile to maximum). The medium grey shading indicates the range from the 10th to 30th percentiles and the 70th to 90th percentiles. The light grey shading indicates the range between the 30th to 70th percentiles, while the median is the 50th percentile. A percentile is the value of the snowpack index below which the given percent of historical years fall. For instance, the 90th percentile line indicates that the snowpack index has been below this line for 90 percent of the years of record.

** Please note: These plots only use daily data from SNOTEL sites in the basin. Because snow course data is collected monthly, it cannot be included in these plots. The official snowpack percent of normal for the basin incorporates both SNOTEL and snow course data, so occasionally there might be slight discrepancies between the plot and official basin percent of normal (stated in basin summary below each plot).



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